WHAT IS CLAIMED IS:

1. An associative memory-based computer, comprising at least one associative memory, a plurality of associative data memories capable of temporarily holding input or output data of said associative memory, and a value judgement device receiving part of the data held in said plurality of associative data memories.

2. The associative memory-based computer according to claim 1, wherein said associative memory is formed of a chaotic neural network.

3. The associative memory-based computer according to claim 2, further comprising a function to modulate a threshold value of a neuron forming the associative data in accordance with a fired frequency of the relevant neuron.

4. The associative memory-based computer according to claim 3, wherein the modulation is carried out by decreasing the threshold value of the neuron in proportion to the fired frequency thereof.

5. The associative memory-based computer according to claim 1, wherein said associative data memories include a first associative data memory sending/receiving data directly to/from said associative memory, and a plurality of second associative data memories sending/receiving data to/from said associative memory via said first associative data memory.

6. The associative memory-based computer according to claim 5, further comprising a function to modulate a threshold value of a neuron forming the associative data in accordance with a fired frequency of the relevant neuron.

7. The associative memory-based computer according to claim 6, wherein the modulation is carried out by decreasing the threshold value of

- 23 -

the neuron in proportion to the fired frequency thereof.

8.　The associative memory-based computer according to claim 5, wherein

said value judgement device receives part of the data in said first associative data memory to evaluate whether an output result associated in the associative memory is a desired result or answers for a purpose, and

an output signal of said value judgement device is used for control of whether to transfer the associative data held in said first associative data memory to said plurality of second associative data memories.

9.　The associative memory-based computer according to claim 5, wherein

said value judgement device receives part of the data in said plurality of second associative data memories to evaluate whether a plurality of pieces of associative data held in said plurality of second associative data memories are consistent with each other, and

an output signal from said value judgement device is used for control of whether to transfer the associative data held in said second associative data memories to said first associative data memory.

10.　An associative memory-based computer, comprising:

a chaotic associative memory including a raw neuron group as a collection of raw neurons implementing actions with the outside world like sensory organs or muscles, and a symbol neuron group as a collection of symbol neurons serving as sources of information processing within the computer;

a first associative data memory directly connected to the symbol neuron group of said chaotic associative memory and having a function to temporarily hold a symbol pattern represented by states of neuron signals of said symbol neuron group;

a plurality of second associative data memories connected to said first associative data memory and having a function to hold a plurality of

patterns of the symbol pattern on said first associative data memory as required;

15   a first value judgement device receiving some of the signals of said first associative data memory and outputting a signal for determining whether the pattern on said first associative data memory is worth holding on said second associative data memory; and

        a second value judgement device receiving part of the data within

20   said second associative data memories and having a function to determine whether the plurality of symbol patterns held in said second associative data memories are consistent with each other.

11.   An associative memory-based computer, comprising:

    an associative memory portion including a plurality of chaotic associative memories,

        each said chaotic associative memory having a symbol

5   neuron group representing an abstractive state and a raw neuron group connected with raw pattern signal inputs from sensory organs like eyes and ears or raw pattern signal outputs to muscles like vocal muscle and those of hands and legs or secretory organs for a specific role to implement an interface with the outside world, and relating a raw pattern from various

10   sensory organs to an abstractive, specific symbol pattern formed based on a common symbol pattern through learning to implement complicated association including correlation between the chaotic associative memories;

        a working memory portion including a symbol stage having a function to temporarily store and hold said common symbol pattern, all said

15   specific symbol patterns and a state pattern from said associative memory portion and also having a function to temporally integrate an activation value for each symbol neuron to modulate its firing threshold value in accordance with the integral, a plurality of working memories having a function to hold pattern information held in said symbol stage for a

20   prescribed period of time, and a control sequencer generating a state pattern signal for use in defining directivity of association, invalidation of each input information, invalidation of each associative output, or directivity of

each symbol signal in accordance with an external object signal and applying the generated signal commonly to said associative memories; and

25 a value judgement network portion including a result determination network receiving some of the pattern signals of said symbol stage in said working memory portion and having a function to evaluate at least whether a result associated in said associative memory portion answers for a purpose and thus to determine whether to newly transfer the symbol pattern held to

30 said working memory, and a consistency determination network receiving some of the pattern signals from said working memories and having a function to determine whether a plurality of symbol patterns held in said working memories are consistent with each other, and, according to the value evaluation, to cause a control sequence to develop into an actual

35 operation;

each said symbol neuron group including, between itself and said working memory portion, a portion where a state pattern signal common to all the memories is input, a portion where a common symbol pattern is input/output, and a portion where a specific symbol pattern for each memory

40 is input/output,

said plurality of working memories having a function to have values indicating the degrees of activation for information held in respective said working memories, the degree of activation having a mechanism to be attenuated with a certain time constant and at the same time to be

45 increased/decreased by a prescribed amount in accordance with a condition of said control sequence, and

each of said result determination network and said consistency determination network being formed with a hierarchy-type neural network having a function to improve a value judgement capability through learning,

50 and value signals as outputs from said result determination network and said consistency determination network being applied to the control sequencer in said working memory portion.

12. The associative memory-based computer according to claim 11, wherein said directivity of association indicates whether to abstract or

objectify said association.

13.   The associative memory-based computer according to claim 11, wherein said directivity of each symbol signal indicates whether said common symbol pattern is an input or output with respect to each said chaotic associative memory.